Jacob Waldburg

TERMS—Three Dollars per annum, payable in advance.

THE SOUTHERN AGRICULTURIST,

FOR THE PROMOTION

OF

AGRICULTURE, HORTICULTURE, RURAL AND DOMESTIC ECONOMY

IN THE

SOUTHERN SECTION OF THE UNITED STATES.

NEW SERIES.—VOLUME VI.—NUMBER 10,

OCTOBER, 1846.

PUBLISHED BY A. E. MILLER,
No. 4 BROAD-STREET.

CHARLESTON:
PRINTED BY MILLER & BROWNE,
Old Stand, No. 4 Broad-street.
1846.

☞ WEIGHT 2 ounces—POSTAGE, 3½ cents.

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Terms of the Southern Agriculturist.

Three Dollars, payable in advance;—for two copies $5; Societies and Clubs can be supplied with ten copies for $20, payable in advance.

The Southern Agriculturist.

(NEW SERIES.)

Vol. VI. OCTOBER, 1846. No. 10.

ANNIVERSARY ORATION.

Delivered before the Burke County (Geo.) Central Agricultural Society, January 13th, 1846. By M. C. M. Hammond.

Waynesboro, Jan. 13th, 1846.

M. C. M. Hammond, Esq.:—Dear Sir: The Central Agricultural Society of Burke County, appointed the undersigned, a Committee, to tender you its thanks for the very interesting and instructive Address delivered by you to day, before it, and to request a copy of it for publication. In discharging a duty rendered so pleasing by our personal gratification in hearing the Address, we cannot forbear expressing the hope, that you will permit us to give it to the public. We are, Dear Sir, your obedient servants,

Jos. B. Jones,
Sam'l. P. Davis,
Chas. Whitehead.

—

Waynesboro, Jan. 13th, 1846.

Gentlemen:—Having been elected by the Society, their Anniversary Orator, the result of my labor belongs properly to them. The Address is therefore at your disposal.

In preparing it, my sole aim was to render it practical and useful; and if it exerts any influence, in introducing among us a system of Agriculture, by which farming shall be combined with planting, and the renovation of land effected or attempted, instead of emigrating, my effort will be amply repaid.

Very respectfully, your obedient servant,

M. C. M. Hammond.

Messrs. J. B. Jones, S. P. Davis, C. Whitehead, *Committee*.

—

ORATION.

We have arrived at an era in agriculture. To the planters in this region, it is one of the deepest interest and importance. Certainly not in our time, probably not in that of our fathers, and I am inclined to think, not since the settlement of this country, has there been any period so critical to the whole agricultural class, and which demanded of them such earnest attention, such mature reflection, and such vigorous exertion.

From the time that our vast forests resounded with the axe of the settler, great staple productions have been introduced one after another, and each has poured its golden tribute into the lap of Industry. Rice, tobacco, indigo and cotton, have in turns, yielded rich rewards to moderate labor and ordinary foresight and economy.

Those who have preceded us as tillers of the soil, have occupied themselves almost altogether, in opening fresh lands and procuring more labor, certain that the amplest profits would repay their efforts, and enable them still to continue clearing more land and purchasing more slaves for the further increase of their fortunes. The time has at length arrived when the entire aspect of affairs is changed. It has fallen upon us to extract from an exhausted soil, a staple, the production of which scarcely affords to the most skillful and industrious cultivator of the most fertile lands, the lowest rate of interest on the capital invested. The supply of cotton exceeds the demand, and stringent regulations of Government everywhere, increase the evil, by checking consumption. While these, the essential causes of our condition, continue to last, and they are likely to do so, at least for our day, there can be no prospect of permanent relief. Flattering hopes from temporary advances are delusive. It may be truly asserted, that the culture of cotton is yet in its infancy—that it has just attracted the civilized world to its consumption, while it is destined to clothe the naked barbarians of the lower latitudes, to supersede linen, silk, and perhaps all other fabrics in use among the myriads of the globe, and in the course of time, to be applied to a thousand purposes of which we have now no conception. And the means operating to accomplish these results, may likewise be apparent to all. Commerce, nourished by this great civilizing product, has at length penetrated the markets of our antipodes, and promises to dissipate their prejudices and awaken their interest, while it promotes our own. The power of steam multiplies the facilities of communication, and the grand Railroad, projected to connect the two oceans, and which, gigantic as it may appear, will surely be constructed, and possibly in our time, will bring the "Golden Indies" to our very doors, tributary to the producer of cotton.

But these broad streams of consumption are not the birth of a season, nor of a generation. They spring up gradually, and will swell with the growth of time, and the enterprise and energy of man.

Our great consumer, England, at this moment has nearly a year's consumption on hand, while one-half the new crop is yet at home. The crop has been almost stationary in amount for several years past, and still, the least apprehension of an increase depresses the market. On the contrary, the slightest advance of price, and numerous temporary causes, may occasion such fluctuation, the hopes of the planter are excited. Thousands of laborers are diverted from other channels into this, and consumption is again surfeited. Besides, the Southwest, including the vast domain of Texas, contains

millions of fertile acres, with all their drawbacks of disease and insect, freshets and tornadoes, much more productive than ours. It is blessed with a genial clime for the maturity of the plant, and is rapidly filling up with population from its own increase and by emigration. It will soon be competent, therefore, to supply the whole world with cotton, at rates which must banish the competition of the East Indies and Eastern Islands, and indeed, that of all other cotton regions, our own it is to be feared included. Thus, production can outstrip consumption, at any period we may anticipate, and thus, without great change among us, is our doom as cotton growers sealed forever.

This is indeed an agricultural era, most trying to us now, and exciting the deepest anxiety for the future. We have no hope of discovering a new staple, which shall be necessary to the existence or comfort of mankind, the cultivation of which we can monopolize long enough to restore our fortunes, and throw it upon future generations, to struggle through that revolution in agriculture, which, however protracted, must come at last. There are indeed, virgin soils still open to us in the West, to which I have already alluded, where we might shun the work which would inevitably await our children here. But if we have no attachment to the graves of our fathers, and the scenes of our childhood—if the family mansion, the broad fields, the lofty forest, the familiar stream, all of which have been HOME to us from our first recollections, possess no charm to bind us here, we may well doubt whether the difficulties we should have to contend with, as adventurers among adventurers, in a strange, wild, and for the most part unhealthy region, might not be at least equal to those which surround us here—and whether it is not the manlier part, to struggle with the ills of Fate upon the spot where God has placed us, than to attempt to shun his visitations by inglorious flight. To many, the most of us, however, even this alternative is not left. We cannot all go. Whatever betides, whether from compulsion or choice, far the larger part must remain where we are.

The question then, is, what are we to do? The answer might be given in the words of the Sacred Book, "that which our hands find to do," and do it with all our might. Let the intelligent planter survey his own premises alone, and it will bring ample conviction of the work which is allotted him. Let him look around upon the plains with their scanty herbage and compacted soil—upon the red hills with their skinless backs and skeleton sides ribbed with gullies! The first thing to be done is, to restore all these to their original fertility, and to carry them indeed beyond it, as has been done a thousand times, in as many different countries, by people far behind us in intelligence and energy. The next thing will be, so to diversify their productions as to gratify more human wants, and avoid, as far as possible, the over-supply of any. And lastly, we must so change our habits of life that we shall become, as we should be, a simple, home-loving, pains-taking, hard-working

people, as wise and polished as we can be, and as becomes our age and country. Here is what we have to achieve, and it must be accomplished, or we are a ruined people, impoverished, fallen, degraded, ready to succumb to the first tyrant who waves his strong arm over us—to sink into the degeneracy of modern Italy and Greece, or rush into the wild anarchy of South American mobocracies.

No candid and intelligent mind can fail to see the work we have to perform, and no one, I trust, will want courage to address himself vigorously to the task before him. Yet, the means of its accomplishment are various, and many honest and earnest differences of opinion in relation to them may exist. *How are we to restore our exhausted lands? How are we to diversify our productions?* These are the points I propose to consider. How we shall alter our modes of life so imperiously demanded by our altered circumstances, is a question I shall refer to the good sense of each individual to answer for himself.

The renovation of exhausted land is a matter which has occupied in the minds of men from the earliest periods of which we have any account, for profane history does not carry us back to a point when the earth, kind and generous as she is to all her sons, did not demand of them a filial regard for her own wants. The Chaldeans irrigated at vast labor and expense. The Egyptians used machines to insure the full benefit of the waters of the "blessed Nile." The Chinese, models for the agriculturist for a thousand years, planted no land not highly enriched; and industrious in collecting and preserving all nutriment to vegetation, were so sensible of its value, as to have passed laws anciently against the waste of manure. In periods more recent, the Flemish have reclaimed and fertilized a barren waste. The English within our day, have nearly doubled the produce of their land, by draining, improved ploughing, and immense contributions of manures, some of which were transported thousands of miles across the deep. And our Northern fellow-citizens also, struggling with a bleak climate, and gravelly, and for the most part poverty-stricken soil, are performing great things in the improvement of land, and in agriculture generally. Modern chemists are now turning their attention to the subject, with a zeal which promises the grandest results, and we may feel sure, that science, which has accomplished wonders for agriculture in the last few years, will achieve for us as much in the long run as she has done for all the other practical professions of mankind. It is of primary importance that we should not turn a deaf ear to her kind and salutary admonitions. In this intelligent community, let the man be scouted, who, resorting to the hacknied ultraisms of an age gone by, presumes to ridicule or denounce "book learning" among planters. Conceited ignorance, hastening to its own ruin, may indulge in grimace when scientific ideas are advanced, which are entirely beyond its comprehension, but the man of sense is not only weak, but criminal, who does not look with contempt upon the jibes of

clodpoles, who, though they may have walked their three-score years and ten, upon the bosom of the earth, know nothing of the history of its formation, its elements, its wants, or even its capacity. The same system of labor taught us by our fathers, if pursued by us and transmitted to our children, would insure their starvation. We must therefore turn our attention to scientific and useful books. We must strive to know all that the collected experience of the world, from the earliest ages, can inform us, of what has been done and can be done again. We must take agricultural papers, and learn what the practical men all over the country, having in view the same great objects as ourselves, have done, and are now doing. And having inwardly digested these things, we must exercise our best judgment in appropriating the results to our own use. We must try carefully and thoroughly every experiment from which we have any reasonable hope of advantage. Ninety-nine of them may utterly fail us, yet the hundredth may renumerate all our trouble, and fix our fortunes on a sure and enduring foundation. The Chinese, who have carried agriculture to its greatest perfection, did indeed arrive at all their knowledge by the slow process of experiment, unaided by scientific principles. How much more rapid should be our progress and more sure our success, blessed as we are, with the incalculable benefit of acquaintance with the physical sciences, and especially with the grand revelations of modern chemistry.

In reclaiming lands, we must make the best use of the resourses which nature offers us, and has deposited most conveniently for our purpose. With manure made in our stables, cow and hog-pens, all of us are familiar. I propose to suggest the means of greatly increasing and judiciously using them.

The most extensively employed in other countries, and the most valuable of all materials for improving land, is lime. For ages past, it has been regarded as the "basis of all good husbandry." It is an essential element of a good soil. Spread upon the land, its mechanical effects, at least they are yet regarded as mechanical, are to loosen and make porous stiff soils and give adhesiveness to sandy ones, and it gives valuable aid in restoring "galls" and preventing washes. Applied in its caustic state, it combines with free acids, which check decay, and converts them sometimes into fertilizing substances, as in the formation of gypsum. It has an important solvent action upon certain inorganic compounds, and largely absorbs carbonic acid from the atmosphere, which it gives up to the roots of plants, and is thus highly beneficial even when applied to calcareous soils. But its greatest advantage is in hastening the decomposition of vegetable matter, such as weeds, roots, &c., uniting with their elements, rendering them soluble in water, and yielding them, when required, to growing plants. In this respect, it is the best of all materials for reducing our compost heaps; yet, as it expels ammonia, the promethean spark of putrescent manures, care must be taken to cover the heaps with absorbents, in order to

arrest the gases as they are evolved. Lime is burnt near the mouth of Briar Breek, and was sold last year at 12 cents a bushel.

On account of its destructive action on the texture of plants, when applied to the growing crop, it has been superseded, where convenient, by the use of marl. Professor Johnston asserts, "that a larger surface of the cropped land of Europe, is improved by calcareous marls, than by the aid of lime and farm-yard manure put together." Though producing, with pure lime, *ultimately*, the same general effects upon the soil, it has the advantages of acting beneficially at all periods, of supplying carbonic acid, the grand principle of nutriment, and of sometimes adding to land animal and saline matters of great value. And while promoting temporary fertility, this substance, caustic or as a carbonate, has a tendency likewise, with the addition of vegetable materials, to give durable and increasing strength to the soil, by awakening with the earthy compounds, a beautiful play of chemical affinities. Marl has been found in various parts of this county, and if diligently sought, I have little doubt, may be discovered within the reach of all who desire its aid. Uncertain experiment need not be apprehended, as its value has been amply tested in Virginia and in Carolina. The quantity to be applied depends altogether on the strength of the land, for which rules may be easily formed.

For specific purposes, plaster or gypsum has been applied with great effect in other countries and in our own. The increased luxuriance of vegetation which it produces everywhere, demonstrates clearly its fertilizing influence. It is a disinfector, and thrown over our manure piles, absorbs the gases which arise from fermentation injurious to health, and concentrates and preserves them for the legitimate purpose of enriching the ground. It has a peculiar affinity for ammonia, the gas encountered in our stables and known by its pungent and offensive smell. Scattered in these nauseous places, it renders them as sweet and the air as pure as in our parlors, while it fixes and saves to us this ammonia, the vital essence of manure. Thus is the health of our negroes and work animals essentially promoted, by the very means which improves so materially the quality of our manure. Plaster is not found among us that I know of, but it can be procured at the North on reasonable terms. After plaster, peat is probably most useful in our stables and pens. Though not a disinfector, it absorbs largely and combines with ammonia. It has been applied to soils in the different forms of ashes, compost, and in its natural state, and where a deficiency of vegetable matter exists, is highly serviceable in all. But it is preferable to us as a compost, as it is scarcely abundant enough to supply the desired quantity of ashes, and requires a long period for decay in its natural condition. Swamp mud or muck, when well dried, is in many respects superior to peat, as it is more finely divided, more soluble, contains a larger proportion of earthy salts, and absorbs equally as well. We possess rich mines of this material, which it becomes us to work as early as practicable. It should be

dug out and piled to dry, at least six months before it is used for any purpose.

Red clay has an affinity for ammonia, and dried, absorbs remarkably, while in its burnt state or reduced to ashes, which is done on a grand scale in other countries, it resembles lime in its mechanical effects, and supplies various salts essential to vegetation, and which are rendered soluble by the burning. Leaves and straw, in proportion to their weight, furnish a large amount of alkaline salts, and absorb freely the liquids of the farm-yard. They are abundant about us and in general use. Corn-stalks are not only excellent absorbents for our heaps, but, containing a large proportion of silicate of potash, an essential manure, should be carefully preserved. Marl, in addition to its other advantages, is likewise an excellent material for our compost heaps and stables; when it begins to operate it stimulates powerfully the process of decomposition, and also absorbs noxious gases, since experience proves, that it renders stables more healthy for animals.

In some parts of this country Bommer's patent system of making manure has been adopted with eminent success. This method should not have been patented, and it is not certain that the patent is valid. The plan was systemized by Jauffret in France, but has been more or less practiced in all ages and countries. It is simply a mode of composting, a little more expensive and laborious than those in common use, by which the raw material is much more rapidly carried through the process of fermentation. There is no magic about it, but still it merits attention, and perhaps is worth the reduced price now asked for it. On small plantations it can certainly be employed with great effect, and possibly on large ones. Yet, as time and labor cannot always be conveniently spared to collect *at once* the large quantity of materials required—without counting the money cost of some of them—while our ordinary compost heaps may be built up by gradual additions during the year; it is a question, whether we could not excite fermentation sufficiently by pouring into the heaps the liquids of the yard and stable, mixed with marl or plaster, and loosening the piles to admit the air, at the same time render the manure good enough for all practical purposes.

But if we are at length convinced, and the times ought at least to have induced this conviction, that it is cheaper to raise our own meat than to bring it across the mountains, and have fully resolved to make the trial, our hog and other pens will supply the most considerable portion of our manure, and of the most valuable kinds that are known. From this source we have heretofore derived little or no benefit. The few hogs reared among us, with some exceptions, are usually turned into a scanty range, with scarce food enough to preserve life, until shortly before killing. They are then allowed the run of pea fields, often picked over, and an increased supply of corn to give a streak of fat. Excepting the straw for bedding, which absorbs something by accident, no manure whatever

is collected. And under such treatment a hog rarely weighs 150 lbs. at a year old. The plan should be changed; we should pen all our hogs and feed them regularly the year round. This course has been adopted successfully at the North and partially practiced with profit by certain planters in both our adjoining States. Thus enclosed and attended, hogs have been known to exceed 500 lbs. at a year old, and to increase for short periods as rapidly as 3 lbs. per day, while each hog, when amply supplied with straw, peat, rotten wood or charcoal, and other raw materials, has manufactured in the year as much as two cords or over 200 bushels of excellent manure. Thus, the manure alone would pay for the feeding, and the increase of flesh over the ordinary accumulation from the means I have described, would be nett gain. Taken from our range, hogs will consume more in fattening too, than they would under judicious treatment in pens, during the whole year; and by enclosing, they would be kept out of mischief to ourselves and our neighbors, would multiply more rapidly, occupy less time in attending to them, and be less liable to be stolen or destroyed by wild animals. From the heat of our summers and the liability to mange and lice, our pens should not be too confined, and free access should be had to running or fresh water. Houses are built for hogs at the North, where they are removed from their element and pampered in the second and sometimes even as high as the third story from the ground. We may not obtain immediately such results here as at the North, though an approximation to them has been made recently in Alabama; yet, with a good good choice of breeds—among which I should by no means recommend the Berkshire—an abundant growth of turnips, artichokes, peas, potatoes and corn, and with our mild winters, there is no reason why we should not surpass them.

By enclosing likewise our cattle, even greater advantages would result to us. After providing our negroes amply with milk, the increase of meat and butter would repay the trouble and expense incurred, while vast quantities of manure would be collected nearly equal in quality to that from our stables.

A grand benefit that would accrue from the enclosing all our stock, if universally practiced among us, would be the ability to dispense altogether with fencing, except for these enclosures. Few taxes are heavier than keeping up the infinite line of fences and cross-fences, not only upon our time and labor, but also on our forests, which will soon be consumed without a change of system. It has been estimated by an enlightened planter of South-Carolina, that there are at least 100,000 miles of rail fence in that State, requiring 8 or 9,000 rails per mile, valued at $50, which gives for the value of all their fences, the enormous amount of five millions of dollars. And the State interest being 7 per cent., and the annual decay of such fences being 13 per cent., or their duration only seven years, the annual interest on the sum thus invested, is 20 per cent., or one million of dollars. The calculation for this State would be

much larger. And our proportion of this immense outlay of capital is incurred solely to allow our stock the benefit of a proverbially poor range. The amount thus invested in fences equal perhaps the full value of our stock; and if the labor of splitting rails and repairing fences were withdrawn and applied to the crop, it would increase it sufficiently to purchase the larger part of the meat for the entire plantation consumption, while, if the necessity of keeping up extensive fences no longer existed, we might dispense with our immense reservations of lands, lying idle otherwise than to supply timber for rails.

In addition to the above sources of manure, I must not fail to allude to night-soil as the most valuable of them all, and which might be more readily collected and applied to use by planters than is generally supposed. It is nearly as good as guano, without costing as that article does the transportation of 5,000 miles. Prejudice, I know, will preclude its general use among us for a while, but when we fairly begin the scheme of manuring, and acquire, as we certainly will do, a sort of enthusiasm in the accumulation and preservation of all fertilizers, and learn that this one is universally saved and applied with the greatest results, in the best agricultural countries, I am sure that it will be as carefully kept, and be far more highly appreciated than stable manure is now.

But besides manuring, other means must be employed in order to loosen and lighten up the soil on our level lands, packed down by tillage and the tread of man and beast for a series of years. Marl or lime will answer this purpose on the surface, but to stir it to a proper depth we must resort to the subsoil plough. This plough, counted the great discovery of modern agriculture, was invented in England many years ago, but revived in Scotland recently, to serve the double purpose of loosening stiff soils from 12 to 20 inches deep, and to drain off their surface, which in this kind of land, especially in cold climates, retains too much moisture. Its success has been complete, both there and at the North, and in some instances a double and even triple yield, has followed a single application. We have a good deal of clay land, damp and consequently sour, cold, and comparatively unproductive, and this is the implement required to drain it. All lands, those the most worn especially, would be vastly benefited by the use of this plough. From what I have observed, I am inclined to think our lightest sandy soils would amply repay its use. If there are any on which it will fail in the long run, they are perhaps only the most compact, and the finest pipe clay, which would run together again at the first heavy rain. By making it porous and light, we would permit air and heat to penetrate and warm and fertilize the land, while the loosened soil would enable the roots to extend wider and deeper in search of nutriment. The subsoil, also, as asserted by high authority, contains an inexhaustible quantity of earthy salts, used by plants, locked in the embrace of chemical affinity, which would be

released by exposure to the pulverizing and decomposing action of the elements. An application of manure to these soils afterwards, and judicious treatment subsequently would insure and prolong their restoration.

On our rolling land, looking hideous with its deformities of naked ridges and gullies, the latter of which have carried away so much fertility, and threaten to extend far into the plains, we must resort to hill-side ditching. It has been practiced in the up-country with decided advantage, and at whatever cost, rules should be procured for its use here before our broken lands are utterly destroyed. Common sense has governed some in the invention of a successful method, but if we lack energy to think for ourselves, or patience to experiment until crowned with success, let a special committee be named to examine and report, or a premium be offered for an essay, on the best plan of operation.

We have extensive swamps and countless ponds in our country, most of them vastly rich. The period has arrived when our attention should be seriously directed to their drainage. For the most part this may be done with ease, as the fall and outlets are abundantly sufficient. The commonest levelling instrument will answer to regulate our operations, and with some instruction, our slaves will ditch faster than white men, which will greatly diminish the expense to us. Instead of requiring manure, these swamp soils could furnish a large amount of peat and mud for our poorer land, and retain afterwards a thickness of vegetable matter, which ages of proper culture could not exhaust. They are equal, large portions of them, to the best lands of Louisiana and Texas, and their yield on the *second year's* cultivation, would repay all the labor of draining and clearing.

From a faithful prosecution of the general plan I have sketched, would soon flow innumerable advantages of the highest value; among the most important of which, would be the promotion of health, the chocest blessing of life, and the consequent increased happiness and value of our slaves. The necessity of Absenteeism, the chief obstacle to our progress, if it could thus be removed, would lead to every solid and lasting improvement. Living permanently on our places, we would feel deeper interest in our pursuit, and rely more on ourselves and less on our agents. The worth and contentment of our people, who perform cheerfully under the eyes of their owners more than they can be made to do for others, would be enhanced; and, instead of devoting all our energies to the worship of Mammon, we would raise all necessaries within ourselves, and having less need of money, would turn more fully to the cultivation of the intellectual faculties and social affections, and the humane charities of life. Our whole system would be changed. After restoring our lands and learning, as would soon be done, that, all in all, our condition could not be bettered by removal to Texas, or Oregon, or California, we would build more durable dwellings and plantation houses—extend our orchards—ornament our gardens

and yards—and having established a SACRED HOME for ourselves, our children and their posterity, would be permitted to enjoy in their reality, the tranquil pleasures and rural blessings, which poets and philosophers of all ages, have assigned to country life.

It may be asked, how is the planter to find time to consummate such a system of improvement as I suggest? Who can carry out the extensive scheme of marling, manufacturing manure, subsoiling and draining? I answer at once, that time and labor must both be found for these things, whatever else may be omitted; and that hands must, without hesitation, be taken for these purposes, *from the crop.* If a planter works but four hands let him give up one, wholly and solely to them. If he works one hundred hands, let him appropriate twenty-five. If he can make as much with three-fourths of his force as all can gather in season, of which I have not a shadow of doubt, since it is estimated, that in time, one half would do it, he will be doing an infinitely better business than he does now. Let him then devote one-fourth of his labor to the improvement of his soil. His crop may be diminished for the first year; indeed, the effect may be to decrease it for several years, until his system gets fairly into operation. But in the end, he will be directly paid for these losses in greatly increased crops, and doubly and trebly paid, in the permanently enhanced value of his lands.

(To be concluded in our next.)

From the Magazine of Horticulture.

EUROPEAN AGRICULTURE AND RURAL ECONOMY, FROM PERSONAL OBSERVATION. BY HENRY COLMAN.

This number* we think one of the most valuable which has been issued, being of a more practical character, and conveying useful hints and suggestions which cannot fail to be of great service to intelligent farmers. The observations on ploughing are of great importance, and should be well remembered. The English and Scotch, so far as we had an opportunity of observing during our recent tour, plough far superior to any thing we find among our own workmen, and we were peculiarly struck with the regularity in which the work was done. Mr. Colman devotes a long chapter to the various modes of plougning, detailing the manner in which the work is accomplished.

Having recently subsoiled a quantity of land for trees, and being well convinced of its very great importance, we extract the following experiment, which we hope is sufficient to show the advantages of the subsoil plough:—

Experiment in subsoiling heath land.—An example of success in the application of the subsoil to heath land, which is within my knowledge, is so remarkable, that I will give it to my readers at large. The gentleman to whom I shall refer, Sir Edward Stracey,

* Vol. I, part 5.

is himself the inventor of a subsoil-plough, known as the Rackheath plough, after the name of the property which he occupies, and which is much lighter of draught than the Deanston plough.

"On my coming to reside on my estate at Rackheath, about six years since, I found five hundred acres of heath land, composing two farms, without tenants,—the gorse, heather, and fern shooting up in all parts. In short, the land was in such a condition, that the crops did not return the seed sown. The soil was a loose, loamy soil, and had been broken up by the plough to a depth not exceeding four inches, beneath which was a substratum (provincially called an *iron-pan*) so hard, that with difficulty could a pickaxe be made to enter in many places; and my bailiff, who had looked after the lands for 35 years, told me that the lands were not worth cultivating, that all the neighboring farmers said the same thing; and that there was but one thing to be done, viz: to plant with fir and forest trees. To this I paid little attention, as I had the year preceding allotted some parcels of ground, taken out of the adjoining lands, to some cottagers, to each cottage about one third of an acre. The crops on all these allotments looked fine, healthy, and good, producing excellent wheat, carrots, peas, cabbages, potatoes and other vegetables in abundance. The question then was, how was this to be done? On the outside of the cottage allotments, all was barren. It could not be by the manure that had been laid on, for the cottagers had none but that which they had scraped from the roads. The magic of all this I could ascribe to nothing else but the spade; they had broken up the land eighteen inches deep. As to digging up 500 acres with the spade, to the depth of eighteen inches, at an expense of six pounds an acre, I would not attempt it. I considered that a plough might be constructed so as to loosen the soil to the depth of eighteen inches, keeping the best soil to the depth of four inches, and near the surface, thus admitting air and moisture to the roots of the plants, and enabling them to extend their spongioles in search of food,—for air, moisture, and extent of pasture, are as necessary to the thriving and increase of vegetables, as of animals. In this attempt I succeeded, as the result will show. I have now broken up all these 500 acres eighteen inches deep. The process was by sending a common plough drawn by two horses to precede, which turned over the ground to the depth of four inches. My subsoil-plough immediately followed in the furrow made, drawn by four horses, stirring and breaking the soil twelve or fourteen inches deeper, but not turning it over. Sometimes the iron-pan was so hard, that the horses were set fast, and it became necessary to use the pickaxe to release them, before they could proceed. After the first year, the land produced double the former crops, many of the carrots being 16 inches in length, and of proportionate thickness. This amendment could have arisen only from the deep ploughing. Manure I had scarcely any, the land not producing then stover sufficient to keep any stock worth mentioning, and it was not possible to procure a sufficient quantity from

the town. The plough tore up by the roots all the old gorse, heather, and fern, so that the land lost all the distinctive character of heath land, the first year after the deep ploughing, which it had retained, notwithstanding the ploughing with the common ploughs for thirty-five years. Immediately after this subsoil-ploughing, the crop of wheat was strong and long in the straw, and the grain close-bosomed and heavy, weighing 64 pounds to the bushel; the quantity, as might be expected, not large, (about 26 bushels to the acre,) but great in comparison to what it produced before. The millers were desirous of purchasing it, and could scarcely believe it was grown upon the heath land, as in former years it was difficult to get a miller to look at a sample. Let this be borne in mind, that this land then had had no manure for years, was run out, and could only have been meliorated by the admission of air and moisture, from deep ploughing. This year the wheat on this land has looked most promising; the ears large and heavy, the straw long, and I expect the produce will be from 34 to 36 bushels per acre. My Swedish turnips on this land this year are very good; my pudding and sugar-loaf turnips failing in many parts, sharing the fate of those of my neighbors, having been greatly injured by the torrents of rain which fell after they had shown themselves above the ground. Turnips must have a deep and well-pulverized soil, in order to enable them to swell, and the tap-roots to penetrate in search of food. The tap root of a Swedish turnip has been known to penetrate thirty-nine inches into the ground. I will add only two or three general observations.

"1st. The work done by the plough far exceeds trenching with the spade, as the plough only breaks and loosens the land all around, without turning the subsoil to the top, which, in some cases, (where the subsoil is bad,) would be injurious to the early and tender plants; and if the subsoil is good, it would be rendered more fit for vegetation after the air and moisture had been permitted to enter. The ploughing is also far preferable to trenching by the spade, even for planting, (i. e. trees,) as it may be done at one fourth the expense.

"2dly. It were very preferable, if possible, to work the horses abreast, pair and pair; but, in using this plough, the horses *must* work in a line, for, if abreast, the horse on the land ploughed would soon be fatigued, by sinking up to his hocks; and, to render the draught more easy, the second horse from the plough should not be fastened to the chains of the horse next the plough; but the chains of the second horse should be made long enough to be hooked about two feet behind the back-band of the chains of the horse next the plough, so that the second horse will draw at an angle of about 33 degrees; otherwise, were the chains of the second horse hooked in front of the back-chain, he would pull the whole weight of his draught, together with that of the horses preceding him, on the back of the horse next the plough; and the strength of the horse would be lost in the draught, as his whole powers would be exerted in his endeavors to prevent being brought down upon his knees.

By so arranging the chains, the power of three horses would be equal to that of four."

Such were the favorable results of this bold experiment. In many other cases, however, the result has not been so successful; and when the state or character of the land is such as to retain the water, as (to use the expression of one highly intelligent farmer, who subsoiled his land without first draining it,) "it sometimes does like a sponge," the subsoiling is as likely, and perhaps more likely to be injurious than beneficial.

From the Southern Cultivator.

MANAGEMENT OF SLAVES.

The undersigned having been appointed a committee by the Barbour County (Ala.) Agricultural Society, to report on the best means of governing our slaves, and of promoting their happiness, and consequently their usefulness to us; beg leave to submit the following

REPORT:

They have had the matters submitted to them under calm consideration, and are of opinion that no subject which properly belongs to a Southern Agricultural Society, should attract more attention than that embraced in the resolution referred to them; and yet, they have not been able to find, that it has ever, as yet, attracted the attention of any Southern Society.* It appears to be a matter of astonishment why this is so; your committee can only account for it on the ground that we have been in the habit of merely following in the wake of Northern Societies, where the institution of slavery does not exist. We have not, it appears, recollected that our condition is quite different from that of the non-slaveholding section of the United States. With them their only property consists of lands, cattle and planting implements. Their laborers are merely hirelings, while with us our laborers are our property; and certainly, the most important portion of it, whether we regard them merely in the light of property, or as intellectual beings, for whose welfare we are in a great degree accountable. If, therefore, it is a matter which pertains to the interest of Northern Agricultural Societies to attend well to the improvement of their lands, and the improvement and comfort of their stock, providing for the best means of cultivating their lands, &c., how much more important is it for us, to turn our attention to the best means of governing our slaves, and of promoting their happiness, and consequently their usefulness to us. It does appear to your committee that no argument can be required to establish the propriety of this question. Every reasonable person must at once perceive the irresistible

* For observations on the "management of slaves," see Southern Agriculturist, 1st series, vol. 2, 1828, p. 575—*Ibid.* vol. 3, p. 238—*Ibid.* vol. 5, p. 181, 231, 562—*Ibid.* vol. 6, p. 281, 282, 571, et sequi:—*Ibid.* vol. 9, p. 70, 225—*Ibid.* vol. 11, p. 449. So much has been said in the foregoing volumes that the present Editor has been silent on the subject in the last series.

conclusion, that there is no good reason why this subject has been so long neglected, and that it is time that we should commence to attend to it. It certainly cannot be that we are afraid to open this subject to the inspection of the world; for your committee are well persuaded that the condition of our slaves will bear a favorable contrast with that of any other laboring population in the civilized world, so far as comfort and happiness is concerned; and will not fall below them in any other point of view, than that of mere abstract notions of human rights, about which, it is true, there has been much nonsensical prating in this as well as in other countries. But whether we are willing to open this subject to the world or not, the eye of the world is on us, and the imagination has formed a picture upon this subject, even in our own country, which, when compared with the truth, is as the midnight darkness in contrast with the light of noonday. Such is the hideous deformity of the picture that we who are accustomed to the daily inspection of the original, cannot recognise the picture from the original. Your committee do not by any means contend, that all the picture of slavery is one of light, (and this they would correct.) But they do insist that, in comparison with other forms of servitude, it will bear a favorable contrast—in fact, they challenge the world to produce a laboring population more happy, better fed, or cared for, than our slaves. Let us therefore be bold and meet the fanaticism of the day, by a fearless exposure of facts; wherever we are wrong, let us correct our errors, and in what we are right, defend ourselves.

Your committee apprehend that there can be no difference of opinion in this Society as to the moral obligation of the master, to attend to the comfort and happiness of his slaves. Nor do we conceive that there will be any difference of opinion as to the obligation of the master, to promote the moral and religious character of his slaves. It is the interest as well as the duty of masters to do this. Indeed our laws require us to attend to the comfort and happiness of our slaves; and our missionary establishment, with its ample support by us, shows that we acknowledge the obligation on us, to promote the well-being of our slaves. But even more—actual statistical returns show that religion is more prevalent among the slaves of the South than the free blacks of the Northern States, and universal opinion concurs in giving them a higher moral character. It is true that in non-slaveholding States, the blacks are free in theory, but in practice their freedom often leads to misery and degradation, and not unfrequently to oppression from his white associate. Whilst the slave is in theory in the closest bands—in practice he has a friend and protector in his master, who from interest, humanity and religion, is bound to protect him and promote his happiness. Thus it will be perceived, that whilst in theory the Southern slave is the most abject and degraded, and the Northern laborer and freed man the most free and happy, yet in practice the scale may be, and in the opinion of your committee often is, turned in favor of the slave. With the Southern master, every motive

which can influence a correctly constituted mind—interest, humanity and religion—leads to kindness towards our slaves; and it is only the brutal, and unreasonable portion of mankind who cannot be influenced by these means. For this class our laws are made and will compel them to do that for which no compulsion ought to be required. Of all the motives which influence the intercourse between men, *interest* is certainly the strongest—this the employer of the hireling lacks to a great extent to induce him to treat his hireling kindly. The interest of the master in connection with the hireling, is to obtain as much labor from him as possible at the smallest cost; and when he becomes too old or decrepit from disease or over-labor to work, to get rid of him as soon as possible, whilst with the owner of the slave, as the slave is his property, and he is bound for his support under all circumstances, we can readily conceive how strongly the motive of the master in taking good care of the slave, and thus extending the time of his usefulness. Your committee, therefore, feel well warranted in adding that the master who could disregard all those motives for good treatment of his slaves, must be brutal indeed, and must be so obtuse in his intellect as to act against the plainest principle of reason. For such cases your committee invoke the rigid enforcement of the laws, and the expression of a strong condemnation by public sentiment. Your committe take pleasure in saying, that although there are instances in this as well as in other communities in which the considerations referred to, have not been sufficient to restrain masters from cruelty to slaves, yet these instances constitute exceptions to the general rule; and they are of opinion that there is a gradual improvement going on in this matter. We recommend, however, that this subject be kept before the community, in order to convince all, that interest, humanity and religion, alike, demand kindness to slaves, and that the law frown on those who treat their slaves inhumanly.

There is one class of our community to whom all the motives referred to, to induce us to kindness to our slaves, do not apply. Your committee refer to our overseers. As they have no property in our slaves, of course they lack the check of self-interest. As their only aim in general is the mere crop results of the year, we can readily conceive the strong inducement they have to over-work our slaves, and here masters are often much to blame, for inadvertently encouraging this feeling in their overseers. It is too commonly the case that masters look only to the yearly products of their farms, and praise or condem their overseers by this standard alone, without ever once troubling themselves to inquire into the manner in which things are managed on their plantations, and whether he may have lost more in the diminished value of his slaves by overwork than he has gained by his large crop. It is a well established fact, that over-work produces premature old age, bodily deformity and debility of constitution, and checks the increase of females. The master, therefore, who has to support his prematurely old, deformed and debilitated slaves, may well question the beneficial

results of his large crops, especially when his only increase of slaves is by purchases at high prices. Your committee take pleasure in referring to the fact, that those planters who are most successful in the acquisition of wealth are generally those who "make haste slow," and who will not "kill the goose, to obtain the golden egg." We are therefore of opinion, that if masters would lay less stress on the mere crop results of the plantation, and place more stress on the proper treatment of their slaves, and the systematic management of their plantations, it would correct the evil referred to. Our overseers ought to have no interest beyond that of pleasing their employers; and nothing but the most inhuman feeling on his part could induce him to treat the slaves cruelly, in opposition to the known wish of his employer. Let the master recollect, too, that he cannot relieve himself from the odium of cruel treatment to his slaves, by attempting to throw the odium on his overseer. It is his *duty* to know how his slaves are treated, and to protect them against cruelty.

From the attachment which exists between the master and slave, your committee are of opinion than an appeal to their better feelings would be sufficient in most cases to control them. They are aware, however, that this rule must have a limit, and that the law of force must have some share in the government of the negro as well as the white man. In those countries where what is called *voluntary* servitude exists, the force then is necessity. When the laborer is dependent upon his daily income for the support of himself and family; and when the loss of his wages, as is often the case, involves the starvation of his wife and children, certainly no greater force can be applied to him than the threat of turning him off to seek his bread, without a character, or probably with a blackened one. In the management of our slaves, this cannot be, as the master is bound for their support. The master must resort to other means of control. After reason and persuasion have been exhausted without producing the desired effect, punishment of some sort must be resorted to. But this should never be carried to a greater extent than is absolutely necessary to enforce obedience to necessary commands. When this mode of discipline is adopted, your committee do not hesitate to say, that with prudent management, prosperity on the part of the master, and happiness on the part of the slave, is the inevitable consequence. No more beautiful picture of human society can be drawn than a well organized plantation, thus governed by the humane principles of reason. When the negroes are well fed, well clothed, and have not unreasonable burthens imposed on them, but are accustomed to a systematic and regular course of labor, especially if the slaves have been born and reared up in the master's household, or have long been members of his family, and hence have that strong attachment which never fails to grow up between the master and his slave in the course of time, the picture never fails to remind one of the patriarchal days when *Abraham*

had slaves born in his house or purchased with his money. Under such a state of things the master knows the man; the man, his master. The master feels confident that the man is attached to him, and will consult his interest. The man feels confident that the master will only require what is right of him, and will abundantly provide for all his wants as well as that of his family. When he or his children are sick, he knows that he will have his master's physician to minister to him. When he is naked, he knows he will be clothed; and when he is old, he knows that his wants will all be supplied to him in his small cottage; during winter he will be warmed by his master's fire, and clothed from his master's flock; and at all times he knows that he will be fed from his master's crib and meat house. The man looks even beyond death, and knows that when he shall have died, he will be decently buried, and his children after him provided for. When sickness and affliction happens to such a master, how anxious the solicitude of his slaves for his recovery? And when at last death overtakes the good master, the tears, the sobs and the cries of his faithful slaves point to him rather as their father than their master. This is no fancy sketch—it is a picture, the original of which we have often admired—and we venture to say, that no more beautiful sight has ever been viewed in the countries of voluntary servitude, however great the boast of its superiority as a system of labor over slavery. Your committee are aware that there are those who doubt the probability of a strong attachment between the master and his slave. But they are satisfied that this position is wrong, and from their experience they *know* that there are numerous cases in the Southern States where the picture drawn above is a faithful sketch of actual life.

With respect to the best mode of governing our slaves, your committee think they cannot bring the subject to the view of the planters in a more proper shape, than by recommending to them the following or similar rules in the goverment of their slaves. Of course, these rules are very general, and may be extended, probably, with advantage. But your committee, after mature reflection, are of opinion that they embrace all the general principles upon which they propose to base the government of our slaves.

Rule 1st. Never punish a negro when in a passion. No one is capable of properly regulating the punishment for an offence when angry.

2d. Never require of a negro what is unreasonable. But when you give an order be sure to enforce it with firmness, yet mildly.

3d. Always attempt to govern by reason in the first instance, and resort to force only when reason fails, and then use no more force than is absolutely necessary to procure obedience.

4th. In giving orders, always do it in a mild tone, and try to leave the impression on the mind of the negro that what you say is the result of reflection.

5th. In giving orders, be sure that you are understood, and let the negro always know that he can ask for an explanation if he does not understand you.

6th. When you are under the necessity of punishing a negro, be sure to let him know for what offence he is punished.

7th. Never act in such a way as to leave the impression on the mind of the negro that you take pleasure in his punishment—your manner should indicate that his punishment is painful.

8th. A regular and systematic plan of operation on the plantation is greatly promotive of easy government. Have, therefore, all matters as far as possible, reduced to a system.

9th. Negroes lack the motive of self interest to make them careful and diligent, hence the necessity of great patience in the management of them. Do not, therefore, notice too many small omissions of duty.

10th. The maxim of making haste slow in plantation operations, is equally applicable as in ordinary vocations of life. The meaning of which is, not by attempting to do too much, to over-work and consequently injure your hands. Recollect that the journey of life is a long, and at best, a tedious one. The traveller who wishes to make a long and safe trip, always travels in regular and moderate stages. Do not kill the goose to obtain the golden egg.

Let these, or similar rules be generally adopted, and carried out by the Southern planter, and your committee do not hesitate to say, that although it may not stop the clamor of wicked men, who seek to make political capital out of the spirit of Abolition, yet their clamor will prove as harmless as the *owl's hoot*—even the slaves themselves will not thank them for their efforts, but laugh them to scorn.

The only food on which this fanatical spirit has heretofore been fed, is the instances in which some among us have failed to carry out the humane principles above recommended. Many of which instances have been carefully collected, properly embelished to suit the taste of old women and children, and published to the world as the legitimate fruits of slavery.

All of which, your Committee, respectfully submit:

JOHN A. CALHOUN,
E. E. DUBOSE,
VIRGIL BUBO. } Committee.

June 13th, 1846.

From the [London] Gardener's Chronicle.

CULTIVATION OF ASPARAGUS.

As it is true in gardening as well as in philosophy, that *ex nihili nihil fit*, you must take care that your asparagus bed is well supplied with plants, before you proceed to a treatment which will make the plants robust and productive. Sometimes there are gaps of several square feet, or the plants are thinly spread over the whole bed. Rectify this as soon as you can, by marking, in the growing

season, all such vacancies, and filling them up in the autum or the spring. About nine inches apart is a good average distance, although probably a foot would secure a larger product. Having secured a good plant, as agriculturists express it, the next thing is to make it vigorous. Lay down this rule as having no exception—that if your beds have not a vigorous growth in the summer, you will look in vain for fine asparagus in spring. As the succulent shoots proceed from the buried root, their size must be in direct proportion to the healthfulness of that root, or to the quantity of organizable matter that root has stored up. How then, can the root be brought into a proper state for producing large shoots? By giving every advantage to the plant during the summer and autumn; so that if your beds this summer are covered with a tall and strong vegetation, the abundance of solar light, &c., will convey a proper supply of matter to the root for next season, and you will cut fine asparagus; but, on the other hand, if there appears only a stunted and weak growth, your produce will be small.

If the principle just laid down is correct, the mode of treatment must consist in judicious cutting, and the application of proper manure. I know many beds which have been ruined almost by an unsparing cropping, and in cases where there has been no deficiency of manure. If the bed has been injured in this way, or if, from any cause, the shoots appear thin and spindling, do not cut them at all, but let the bed have a rest during the whole season. The next spring the advantage will be manifest. Nothing would tend more to bring exhausted beds round than this generous treatment, and by the sacrifice of a few dishes now, you will secure an abundance next year. What is true of a whole bed applies also to individual plants. I always leave the weak shoots in the beds, on the presumption that by cutting them they will become weaker, but that they will make robust shoots by being allowed to grow and bask in the air and the sun. My remarks also lead to another practical conclusion—to leave off cutting in time. Fine shoots must not be looked at with a longing eye, as though it were waste to let them run to branches and flowers. They are the parents of a future race, and ought to be kindly and respectfully treated.

Manure must be plentifully given in conjunction with the above mode of treatment. It should be applied at such times that the growing plant may receive the benefit. It is possible for a top-dressing put on in autumn to have all its valuable properties washed below the reach of the roots, before they begin to exercise their vital powers. However, cover the beds with good dung in autumn, but do not neglect to furnish a fresh supply in spring. Salt and liquid manure should be used at the latter period, as they become immediately available. I have just dressed my beds in the following manner, and it is not too late for others to adopt the plan. I covered them with salt, so that on a dry day the whole surface looked as though it had been snowing; they were then watered with about sixty gallons of liquid manure saved from a stable during the

winter. When this had sunk in, the beds were raked, stones picked off, and a neat appearance given them. If you have no liquid manure, make some by diluting good stable dung with soap suds, &c. As the roots will soon begin to move, the soil will be furnished with those materials which will ensure a quick and strong growth, and if the beds were healthy last year, you may depend on a good crop.

HOW TO RAISE "GIANT" ASPARAGUS.

Mr. Editor:—There are sold in the seed-stores, several sorts of asparagus, which claim to grow to unusual size, and produce giant stalks. I have bought and planted these sorts, and have found them not perceptibly different from the common old sort.

I want to tell you and your readers, if you will have a little patience with me, how I grow common asparagus, so that it will always rival any giant production, whether from Brobdignag or Kentucky. Every one who has seen my beds, has begged me for the *seed*—thinking it a new sort—but I have pointed to the *manure heap*—(the farmer's best bank)—and told them that the secret all laid there. The seed was only such as might be had in every garden.

About the 1st of November—as soon as the frost has well blackened the asparagus tops—I take a scythe, and mow all close down to the surface of the bed; let it be a day or two, then set fire to the heap of stalks; burn it to ashes, and spread the ashes over the surface of the bed.

I then go to my barn-yard; I take a load of clean, fresh stable manure, and add thereto, half a bushel of hen-dung; turning over and mixing the whole together, throughout. This makes a pretty powerful compost. I apply one such load to every twenty feet in length of my asparagus beds, which are six feet wide. With a strong three pronged *spud*, or fork, I dig this dressing under. The whole is now left for the winter.

In spring, as early as possible, I turn the top of the bed over lightly, once more. Now, as the asparagus grows naturally on this side of the ocean, and loves salt water, I give it an annual supply of its favorite condiment. I cover the surface of the bed about a quarter of an inch thick with fine packing salt; it is not too much. As the spring rains come down, it gradually dissolves. Not a weed will appear during the whole season. Everything else, pig-weed, chick-weed, purslane, all refuse to grow on the top of my briny asparagus beds. But it would do your eyes good to see the strong, stout, tender stalks of the vegetable itself, pushing through the surface early in the season. I do not at all stretch a point, when I say that they are often as large round as my hoe

handle, and as tender and succulent as any I ever tasted. The same round of treatment is given to my bed every year.

I have a word to say about *cutting* asparagus, and then I am done. Market gardeners, and I believe a good many other people, cut asparagus as soon as the point of the shoot pushes an inch or two through the ground. They have then about two inches of what grows above ground, and about four or six inches of what grows below. The latter looks *white* and tempting; I suppose people think that for the same reason that the white part of celery is tender, the white part of asparagus must be too. There is as much difference as there is between a goose and a gander. It is as tough as a stick; and this is the reason why people, when it is boiled, always are forced to eat the tops and leave the bottom of the shoots on their plates.

My way is, never to cut any shoots of asparagus below the surface of the ground. Cut it as soon as it has grown to proper height, say five or six inches above ground. The whole is then green, but it is all *tender*. Served with a little drawn butter, it will melt in your mouth. If your readers have any doubt of this, from having been in the habit, all their lives, of eating hard sticks of white asparagus, only let them cut it both ways, and boil it on the same day, keeping the two lots separate, and my word for it, they will never cut another stalk below the surface of the bed.

Yours, &c. T. B.

New-York. [*Horticulturist.*

From the Boston Cultivator.

SWAMP TUFTS FOR SANDY AND GRAVELLY SOILS.

Messrs. Editors:—I have found the tufts taken from swamp land, by making drains, after having been well rotted, and mixed with a dry, coarse, sandy or gravelly soil, far superior to the best manure from horses, cattle or sheep. I have even tried it on very gravelly land, and I might say on land composed almost entirely of stones from the size of shot to that of cannon balls or small pumpkins, and found it greatly to increase the produce when tilled or sown to grass, where your barn-yard manure seemed to vanish like ether, without any or but little beneficial effect. I have tried them in several instances on such soils as above named, and in every instance found them to answer an immediate and valuable purpose, and to be as desirable as the best of manure on other lands. The manner I have applied these tufts has been by scattering them on the land after it had become mellow by ploughing or tillage, and then by ploughing, mix them with it. The whole land after this would form a productive soil, whereas before it was hardly more adhesive than the same mass of peach stones would be. D. W.

Wendell, Mass.

From the Agricultural Gazette.

BONES DISSOLVED IN SULPHURIC ACID AS A MANURE FOR TURNIPS.

The application of bones dissolved in sulphuric acid as a manure for turnips being now so general, perhaps the following hint may be acceptable to your readers, as it is the opinion of several practical farmers who tried the experiment last year, and are abont to repeat it. Take a large but shallow tub, about eighteen inches deep (regulating the size according to the quantity required) spread the bones at the bottom of the tub, and add sufficient water barely to cover them, then pour in the acid, stirring the whole mass with a strong fork; an immediate fermentation takes place, and the bones will be sufficiently dissolved for use in 48 hours, or even less. The best way to prepare the compost for the drill, is to mix half the quantity of peat or wood ashes—according to quantity of bones used, passing it, if necessary, through a coarse sieve—and afterwards adding as much dry mould as the drill requires. This plan is, we think, better than dissolving the bones in a heap of dry mould (as recommended by Mr. Pusey,) because, without great care, the acid, when poured on to the bones, is apt to escape into the mould, therefore we prefer adding the water first; a tub is better than an iron vessel, the sulphuric acid having a great affinity for metal will soon destroy it, but it has no effect upon wood. The proper proportion per acre is 4 bushels of bone dust, with 40 pints of sulphuric acid, which weigh about 70 lbs. if bought in small quantities; 3*d*. a pint is the price of the acid in the country.

From the Albany Cultivator.

TO KILL WEEDS.

Weeds, like other plants, have each their peculiar constitution, prefer certain kinds of food, and perish on the application of others. We have seen a pound of nitrate of soda administered to a seakale plant without visible effect; half an ounce would probably destroy a rhododendron. Common stable manure is prejudicial to coniferous plants, and in overdoses will kill them; an oak feeds greedily upon it. So it is with weeds. Excessive doses of salt will destroy all ordinary vegetation, weeds included, but promote the growth of asparagus in a most remarkable degree, thus proving itself to be a poison to one plant and a nutritious food to another. But salt cannot be used in large doses to extirpate weeds generally, because some, like the asparagus, may flourish under its action, and most crops will certainly be destroyed by it. Professor Henslow succeeded in destroying moss and weeds on gravel walks, by means of corrosive sublimate, green vitrol, and blue vitrol, especially the last. But corrosive sublimate destroys every living form of vegetation, as well as the weeds; and the two sorts of vitrol

have no permanent action, encouraging the subsequent growth of many sorts of plants, and so promoting the vegetation of weeds rather than destroying it.

In practice, these chemical agents can only be employed for the destruction of weeds in certain special cases, such as the asparagus, which thrives under doses of salt, which kill most other plants; or as tobacco, which feeds greedily upon quantities of nitrate of soda, which would destroy any ordinary vegetation.

COMMON SALT FOR FIXING AMMONIA.

During the progress of fermentation which takes place when large quantities of stable and farm-yard manure are thrown together, a considerable portion of the most valuable part is lost in the shape of carbonate of ammonia, which flies off. To prevent this great waste, common salt may be used. It is a principle in chemistry that substances combine more freely at the moment of their germination or disengagement than at any other time. The chloride of sodium or common salt immediately unites with the carbonate of ammonia as it is formed, and a double decomposition takes place, producing muriate of ammonia and carbonate of soda.

[*Extract from a Farmer's Dairy.*

From Hovey's Magazine of Horticulture.

DETAILS OF A MODE OF TRANSPLANTING LARGE TREES,

WITH ENTIRE BALL OF ROOTS, WITH SOME REMARKS ON THE UTILITY OF THE PALN. BY PETER HENDERSON, OF PITTSBURG, PA.

Perhaps there is no matter connected with horticulture that has been subjected to such division of opinion as the transplanting of large trees—some contending for the general utility of the practice, others denying it as being little less than chimerical, unless here and there in particular cases. In the late edition of Downing's *Landscape Gardening*, in treating of this subject, he seems to doubt its practicability, generally, in the climate of the United States. The opinion from such an authority will, unquestionably, tend greatly to dissuade from the attempt many who were otherwise disposed to try. Yet, with all deference to the opinion of the writer of that admirable work, I beg decidedly to differ from him in this instance; and the reason I give for this, perhaps seemingly presumption, is, that I have recently had *extensive* practical evidence that trees from 40 to 50 feet high may be transplanted with perfect facility, and grow as readily as those from 15 to 20. This assertion may seem to some rather incredible, but I will proceed briefly to

detail the process and its results. My employer being anxious to plant trees of a large size near his residence, resolved, upon a perusal of "Stewart's *Planter's Guide*," to try the plan there recommended; accordingly, a "machine" was procured and the work commenced. Not, however, altogether in the manner described by Stewart, for, as the operations were conducted principally in winter, the "balls" were all in a frozen state.

Previous to the commencement of winter, the trees intended to be removed were dug around, below all roots, (at a distance from the trunk proportioned to the size of the tree,) cleared from leaves, grass, &c., and left exposed to the action of the frost. When thoroughly frozen, the "machine"—which is simply a pair of strong wheels and axle, with a stout pole attached—is then backed close to the trunk of the tree; the pole is next raised to and firmly fastened to the stem, and by meams of blocks and tackle attached to a ring, near the extremity of the pole, the tree is drawn down to a horizontal position; a third wheel, constructed on the principle of a castor, is inserted into a socket near the end of the pole, which prevents, to a great extent, the branches from rubbing on the ground. The third wheel is deemed unnecessary by the author of the *Planter's Guide*, and no doubt is, in the system he describes; but in removing trees with frozen balls we have found it almost indispensable. Oxen are much more useful in conveying the trees than horses, as they pull steadier; one pair is generally sufficient for trees of a medium size, say 35 feet, but for those of the largest size we have planted, (50 feet,) three pairs have been found necessary. The planting is performed in the usual manner, particular care being taken to have all the cavities under and around the ball properly filled up.

The trees transplanted were of various kinds; of evergreens, there were seven or eight handsome specimens of *hemlock spruce*, varying from 25 to 45 feet in height, and from six to twelve inches in diameter at the base of the trunk. The deciduous kinds embraced greater variety, including sugar and silver-leaved maples, elms, oaks, beeches, persimmons, &c., running from 20 to 50 feet in height. Of upwards of sixty trees, which were planted during last winter, only five have failed to start, and many of them are growing, apparently, with as much vigor as if they had never been disturbed. Still the circumstances, under which they were removed, were far from being favorable. The greater part of them were conveyed nearly a mile through twelve inches of snow over a bad road. And what by many would have been considered a serious objection, the deciduous kinds were almost in every instance destitute of what Sir H. Stewart calls the "protecting properties," being selected principally from shady woods, as no suitable trees could be procured from exposed parts.

Perhaps some of your readers, who feel interested in this matter, may wish to know with what expedition our operations proceeded;

for the information of such I will state, that, on our first commencement, three men, with a pair of oxen, were unable to remove more than one or two medium sized (35 feet) trees a day, but soon becoming accustomed to the work, they were enabled to bring home and plant three or four a day; and this, as I have before stated, under circumstances which in few places could be more unfavorable. Of course, the larger sized ones were less speedily removed, and also requiring additional hands.

From a view of these operations and their gratifying results, it would appear that the transplanting of large trees, for useful or ornamental purposes, *can* be successfully practiced in the climate of the United States. The subject is certainly more deserving of attention than has heretofore been paid to it. The advantage derived from the severity of our winters, in enabling us to remove a tree, with its roots embedded in a mass of frozen earth, makes success scarcely a matter of doubt. I am not aware that the "transplanting machine" has ever been applied before to remove trees with *frozen* balls of earth. Mr. Downing mentions that they may be removed when in a frozen state by "rolling them on a sled;" this we have found to be a troublesome method at best, and quite impracticable on an undulating surface, such as we have here, as our repeated failures previous to using the "machine" too well proved.

I cannot at all concur with the reasoning of Mr. Downing, in maintaining that trees of "extra size" cannot be as safely removed in this climate as in that of Scotland. He says, "the climate of Scotland, during four fifths of the year, is in some respects the exact opposite of the United States. An atmosphere which, for full nine months of the twelve, is copiously charged with fogs, mist and dampness, may undoubtedly be considered as the most favorable in the world for restoring the weakened or impaired vital action of large transplanted trees." It would seem that Mr. D., in allowing his imagination to dwell so much on the humidity of the Scottish climate, (which by the way he rather exaggerates,) has altogether lost sight of its temperature, which I am certain, during the spring months is, at the lowest figure, 15 degrees lower than that of the same months in the Northern States of this country. Now every one who has had any experience in gardening operations knows, that the dormant or weakened energies of trees or plants, of almost every kind, are more quickly called into action, and more fully and healthily developed in a moderately high temperature than in a low one; and also that a cold damp atmosphere is ever accompanied with a languid vegetation.

Now if this is admitted to be a general law of the vegetable kingdom, why should large transplanted trees prove an anomaly? but certainly they do not. I have had considerable experience in planting, in Scotland and in the United States, and have invariably found my operations to be more successful here than there, and have ever believed the cause to be, that the wet chilly spring months of

Scotland, are more *unfavorable* for "restoring the weakened or impaired vital action of large" (or small) "transplanted trees" than the drier but warmer season in this country. And the success of the extensive removals before alluded to, has done much to confirm me in the opinion.

Pittsburg, Pa., May 26th, 1846.

From the New-Orleans Commercial Times.

THE CATERPILLAR.

We beg to call particular attention to the subjoined communication from our valued agricultural correspondent, Thomas Affleck, Esq., in relation to the army worm, which has recently committed, and is still inflicting severe injury in the cotton-field. The information which he conveys is extremely discouraging for the planter.

Ingleside, Adams county, Miss., August 29th, 1846.

To the Editors of the Commercial Times:

Finding much difference of opinion as to the nature and character of the worm now ravaging our cotton fields, the extent of the injury already done, the probabilities of their further increase, and of the crop being ultimately lessened in amount by them; and finding, further, that an opinion expressed by me as to the affect of the worm's ravage, has been misunderstood, I shall in this instance speak in the first person, leaving you to add editorially, what further information you may possess from other quarters.

It is now some four weeks since the appearance of *the caterpillar* was spoken of. It was, at that time, supposed to be a mistake—that some other worm had been taken for the true cotton devourer. I made every inquiry in my power relative to the worms spoken of, and took an early opportunity of seeing them. They are the same as those we had in such myriads in 1844, and such I pronounced them, holding out no hopes of escaping injury this year, but advising all to *console themselves with the hope* that the stripping of the leaf might aid the cotton in opening this backward, wet season.

At this time, the worm is in every cotton-field in this region of country, and, I have no doubt, in every county in the State. The present *crop* of them is not sufficiently numerous to do material harm—there being not more perhaps than from half a dozen to a dozen on a plant. These have mostly attaind the chrysalis and moth state. The latter is to be found, in the greatest numbers, not only in the cotton fields, but in the woods and swamps, and hills —miles from a stalk of cotton. They travel rapidly, and to a great distance. *I have no hope, whatever, that the plant will escape total destruction from the myriads of worms that must of necessity appear in a week or two from the eggs laid by these moths!*

To prove that I am not needlessly alarmed, let us look at their Natural History—it must be a mere sketch—I have not leisure, nor am I yet fully prepared to give a full and scientific account of them.

The parent insect is the *Noctnaxylina*, a night flying or owlet moth—I think belonging more properly to the Mamestradæ—of a beautiful greenish grey, with bronze shading: on each outer wing there are two small white spots, shaded with bronze, near the shoulder and in a line with the edge; and lower down, a large kidney-shaped black or brown spot, shaded with white. Several wavy lines of purple cross the outer wing, which has also a fringe of the same color on the inner edge, and a fringy grey and purple at the end. The body is thick, and tapers to the end. The female is larger than the male, but they are otherwise much alike. The female deposits her eggs on the leaf (I am not fully satisfield that they are placed *only* there) in clusters; they are round, and whitish or pale green, and quite small. They are hatched in from two to five days, according to the weather, and immediately commence eating the leaves of the plant. They increase rapidly in size, attaining their full growth of one and a half inches in from two to three weeks. They are of a light green color, with longitudinal stripes of yellow on the sides, and along the back two black ones, separated by a very narrow line of white. Some are without the black stripes. They are also studded with small, distinct black spots, from nearly every one of which a black hair grows. They have sixteen legs—one pair behind, eight in the centre of the body, and six pro-legs. They elevate the front half of the body, when at rest, giving it a continued motion from side to side. They give forth, when in numbers in a field, a peculiar sweetish odor, readily recognizable by the observant planter. During the lifetime of the worm, it casts its skin at least four times. When it has attained its full growth, it places itself near one of the corners of the leaf, spins a few threads of silk, attaching them to the leaf in such a way as to draw up the edge, which it makes fast to the surface of the leaf, forming a scroll, within which it undergoes its transformation to a *pupa*. This it does in thirty-six to forty-eight hours. The pupa is black and shining. In this state it remains from one to three weeks. I have found the state of the weather influence the change thus far, generally from seven to twelve days—when the perfect insect appears, and proceeds to multiply her species. This each female will do to the extent of from two to six hundred or more.

It is thus seen that we cannot entertain a hope. Those moths which have been flying, in such numbers, around the lights in every house, for the last week, have already deposited their eggs, or are now engaged in doing so. They will quickly hatch out, and absolutely over-run us. I have accounts of them in almost every cotton-growing State. The crop is *at least* three weeks later than usual. I think that the incessant rains we have had, and still have, put it back yet another week. The first crop of bolls is rotting very much

—what little cotton has gone to market, you will observe, has been pronounced very middling in quality, and even that opens slowly. The after-crop the worms will either destroy, or greatly injure, by eating off the calyx leaf or *square*. In ordinary seasons we have a bale to the hand housed by this date—this year, scarcely a pound. The boll or bore-worm, too, a new enemy in the hills, within the last two years, will destroy *ten per cent.* of the young bolls, after they have attained a size at which they are usually considered safe. Of him I shall speak at another time—as also of the checks and preventatives to be used for both.

I am by no means desirous of seeing a panic got up; but really think that every cotton-grower should hold on to his present year's crop, until he can form a pretty close opinion as to the amount of damage likely to ensue from the worm. As a general rule, it is always best to take the chances of the market, selling as quickly as the cotton is sent in. But the present year is an exception. By the 1st or 15th of October, we shall be able to know. Good cotton will be a scarce article, at best, this year, and *must* command a high price. If the grower does not realize that price some one else will.

Let me here urge it upon the reading, observing class of planter's, to observe those insects closely, and learn during the present season, all they can of their nature and habits, and submit it at once to writing. If they will communicate direct with me, I shall be glad. Let them also endeavor to form a neighborhood "Planter's Club"—proposing to some ten or a dozen of their most intelligent neighbors to do so, meeting once a month at each others houses, alternately; spend the forenoon in a ramble over the plantation, the owner pointing out and defending his practice; after dinner, let some subject be discussed, such as the *nature and habits of this caterpillar*, from the close, personal observations of *each member*—such subject having been specified at the preceding meeting. Let some one act as secretary, and note down the results, handing his notes to the *Commercial Times*, or the nearest local paper, for publication. You will see at once, how much good might thus be effected. The planter, too, could thus bring to bear, in favor of his business, the immense power and influence of association, Yours, &c.,

T. A.

THE COTTON MOTH, OR CATERPILLAR—ITS EFFECTS UPON THE CROP.

The subjoined letter from Mr. Affleck, our agricultural correspondent, in regard to the ravages committed by the army-worm, etc., will be read with interest. We published a communication from the same gentleman in yesterday's paper, but the present enters more into detail, and is well deserving the consideration both of the planter and merchant.

Ingleside, (near Natches,) Sept. 4th, 1846.

Messrs. Editors :—In my last I gave merely a hurried outline of the nature, habits, and appearance of these insects; expressing my fears that they would devastate and destroy the crop of the present season. At that time, only a week ago, though many plantations had been entirely laid waste, a great majority had not been materially injured, though the caterpillar was then on the increase. This was the condition of the large and beautiful fields around Vidalia, overlooked from the bluff at Natchez. The worms were numerous, but had increased so slowly, and had eaten so little of the leaf, that the hope was entertained, and expressed, that the crop might yet escape—some even saying that needless alarm had been got up. I had no such hope and belief. *At this moment those immense fields are one great waste.* Not a leaf to be seen. Everything upon which the mandible of the worm could operate being consumed, they are now travelling in search of more food. And thus it will be with every crop in the country, so far as I can learn.

In 1844, they made their first general appearance, about the 10th or 12th of September; and when they had consumed the leaf, calyx and so on, the fields looked as white as when, after a severe frost, the leaf had all dropped—the cotton having, most of it, matured so far that the worm did not greatly lessen the quantity, though injuring the quality, and rendering the picking more tedious; and, in addition, we had had over two months of picking before the worms had done any damage. But this year the case is very different. Many have not yet begun to pick. The fields look dark and blighted, after the worms have stripped them, no open cotton being visible. Indeed, a more heart-breaking sight to the planter, could hardly be conceived—after a season's incessant toil, and that greater than usual, all the expense of making a crop being incurred, just when he is ready to gather in his harvest, he finds all blighted.—Still his debts must be provided for, and his negroes supported through the fall and winter—unlike the farmer, employing free labor, when he can dismiss in such a case.

How wide the ruin may ultimately spread, is impossible yet to say; though the accounts now received show it to be already but too general

This scourge to the cotton planter is by no means a new thing; nor is it confined to this country alone. In all the West India Islands, in Guiana, and elsewhere in South America, it has been the frequent means of greatly lessening the crops. "In Georgia, the caterpillar made its appearance as early as 1793. In that year the destruction was complete, (from Major Butler's field of four hundred acres, only eighteen bags were made.) Seven years afterwards they commenced the work of devastation in South-Carolina. In 1804, the crops, which would have been devoured by them, were, with the enemy, effectually destroyed by the hurricane of that year. (Between 1804 and 1825, their depredations were only occasional, and then confined to particular fields.) In 1825 the

visit of the worm was renewed, and its ravages were universal and complete. In 1827, '29, '33, '34, '40, '41, and '43, the lower parishes generally, or particular locations, suffered greatly by its depredations. (The caterpillar is seldom seen in the upper parishes.*") In Guiana the worm is called *chenille*. An interesting account is given of it in the Edinburgh Encyclopædia; article, *Cotton*, by Dr. Chisholm, of Clifton. The same account is repeated almost *verbatim*, by Mr. Porter, in his "Tropical Agriculturist." They appear there every year; doing material injury, however, only every second or third year. They show themselves in that mild climate even during the winter, and appear and disapper many times during the year. Some elaborate estimates are made by Dr. C. of the amount of labor which might be profitably expended in destroying the *chenille*, to which I would refer the curious, though they do not apply well to the present value of cotton. He gives one hint, however, which I think a good one. The tobacco growers of Maryland and Virginia have acted upon it for many years, and with much success. "A prudent and economical planter will increase the brood of every species of domestic poultry, particularly turkeys; for this has a tendency to diminish the brood of *chenille* in a very great degree, while profit arises from the augmentation of useful stock. Turkeys are observed to have a remarkable appetite for the larvæ of the cotton moth, and devour prodigious quantities of them." In the Bahamas, between March and September, 1788, no less than two hundred and eighty tons of cotton, on a moderate scale, were devoured by this worm. The same cause produced the abandonment of the gossypium culture in several of the West India Islands.† I saw it recently stated, that the destruction of the plant by the caterpillar, put an entire stop to the cultivation of cotton, for many years, in Egypt.‡ The prospect of a like result in this country, seems by no means improbable. The appearance of the worm has hitherto been partial, large districts and even entire States escaping; but this year it seems to be general over the entire cotton-growing region.

I would gladly introduce here, Say's description of this insect, together with an account of its habits, by Dr. Capers, to be found at page 203, of volume 1, of the *Southern Agriculturist;* but find that I must refer my readers to that work.

The most important questions to the planter are, can a check be put to the ravages of the caterpillar? Cannot some means be used to prevent their appearance? Or in that event, can their increase to an injurious extent be prevented, and how?

To this I can only say, that without a more general and united effort on the part of the planting community, than we can possibly expect to see, little can be hoped for. When once the moths make

* Seabrook's Memoir.

† Seabrook's Memoir, quoting from Edward's West Indies.

‡ In the Woodville Republican, by *Agricola*. Where does the writer find his authority. I shall be obliged by a reference to it.

their appearance, *spread they will.* I find them in dense woods and swamps, miles from any cotton field; so that there is no reason to doubt that a single moth may fly a hundred miles or more.—Some are of the opinion that, like the cicada or locust, they only appear at regular and distant intervals, generally supposed to be once in four years. But this is all a mistake.

Of those caterpillars which enter the chrysalis state latest in the fall, many wind themselves amongst evergreen leaves, under strips of rough bark, and so on, where they remain protected all the winter; the moths make their appearance with settled warm weather, deposit their eggs and die. If the worms from these eggs escape the destruction to which they are greatly exposed by the smallness of the plant and of their own numbers, it is evident that the second brood must be immensely increased; and the loss of crop follows the production of a third crop of worms. If a good large flock of young turkeys were kept going through the cotton field from the time of *scraping*, an old woman driving and protecting them, the chances for the destruction of the first crop of worms would be greatly increased.

Mr. Seabrook, in his memoir on the cotton plant, says: "Every effort which the most scrutinizing and active minds have hitherto suggested to prevent their propagation, or to render innoxious the career of these insatiable depredators, has utterly failed. From this consideration, added to their great tenacity of life and extraordinary fecundity, it is supposed that the ordinary means of effecting either of these desirable ends will never succeed. The caterpillar, after being plunged into spirits of turpentine, or corrosive sublimate, is as ready for his all-day meal, as though he had been dipped in pure water. If the section of the field in which the pupæ only are seen, be burnt, the progress of the worm, as experience testifies, will scarcely be impeded. Lime will quickly produce death, and so will oil rubbed on the abdomen; but how can these be used efficaciously on the larvæ, when from five to ten hundred on a plant are frequently seen? Or, can the pupæ, reposing in their glutinous cells, be affected by any external application? In this way the planter reasons, and when the enemy appears, no means whatever are ever employed to preserve the fruits of his labor. As it is the will of Providence, he assures himself, submission becomes a duty. In relation to this matter, it may be asked—is the object at which the grower has so long aimed, unattainable? Let the following statement answer? The caterpillar appeared in several parts of the field of John Townsend, of St. John's, Colleton, early in August last (1843.) The plants were luxuriant in growth, and tender in weed and leaf, and the weather being warm and rather moist, was altogether propitious to the spread and multiplying of the worms. By the adoption of prompt and vigorous measures, some of which are new, and a rigid perseverance in their execution, his crop escaped unscathed, while many of his fellow-laborers, who lacked faith in any remedy, suffered greatly. In the attainment of his purpose,

the means resorted to by Mr. Townsend were the following:—

1. His people searched for and killed both the worm and the chrysalis of the first brood.

2. On the appearance of the second brood, he scattered corn on the field to invite the notice of the birds, and while they depredated on the worms on the tops of the stalks and their upper limbs, the turkeys destroyed the enemy on the lower branches.

3. When in the aurelia state, the negroes crushed them between their fingers.

4. Some patches of cotton, where the caterpillars were very thick, and the birds and turkeys could not get access to them, were destroyed.

5. The tops of the plants, and the ends of all the tender and luxuriant branches, where the eggs of the butterfly are usually deposited, were cut off.

By these means, resolutely pursued, although at one time the prospect of checking the depredations was almost cheerless, not the slightest injury to the field was sustained. (The experiment cost Mr. Townsend two and a half acres of cotton, about fifteen bushels of corn, and the work of all his people for about five days. This gentleman was roused to unusual action by the recollection, founded on analogical reasoning, that, of one moth of feeble wing and tender body, which a vigilent eye might discover and destroy, the progeny in six weeks amounted to at least twenty-six millions of worms.) As the reasons for the measures adopted by Mr. Townsend are perhaps apparent, it behooves the planter to reflect that, on the first visit of the caterpillars, while their number is few, they might be, if not entirely gotten rid of, materially lessened; that that in the puapæ state they are easily detected, and of course as easily killed; and that while early and indefatigable exertions may be crowned with success, delay or tardiness in his operations will certainly be fatal.

Efforts of the same kind have been made, in this region, during the present season, the success of which I have been unable to learn as yet. My own crop was entirely overrun when I first saw them. In 1844, I suggested the use of torches or small bright fires, scattered over the fields, at night, into which the moth would fly and be destroyed. These have been extensively employed this year, to the destruction of myriads of moths. I shall, in future, lay in a few barrels of rosin, as part of the regular plantation supplies, to be added to the fires which shall be kept burning at intervals through the entire summer. Of course, if no moth is burned, it will be unnecessary to repeat or greatly multiply the fires, until they do appear. Rosin can be bought for a mere trifle—some $2 per barrel. The first appearance of the *chenille* is readily discovered by the peculiar odor emitted by them—an odor which, once felt, is not likely to be forgotten by the planter.

A judicious rotation of crops would do much to render innocuous the visits of the caterpillar. Not that such a change in crops would

prevent their appearance, by the destruction of the larvæ or pupæ, but it would add to the early growth, health and vigorous productiveness of the plant, cause it to boll early and full, and thus lessen the chances of injury. I have no doubt, too, that it would have the effect, partially, of lessening the number of pupæ likely to escape during the winter.

The attention of the Legislature of Louisiana—I have little hope of that of Mississippi—should be called to this subject, and that of the *boll worm;* and means used by them to try every method of checking the evil.

The *boll worm* is the more insiduous enemy of the two. Until this year, I have heard but few complaints of it in the hills, and have hitherto had no opportunity for examining into its history, etc. This season, however, it has not only done great injury to the low land crops, but has cut off, at a very moderate estimate, twenty per cent. of many hill crops. I have seen on single stalks, and these by no means single instances, from one to two dozen or more bolls, when as large as a small hickory nut, completely eaten out, leaving nothing but the hull of the boll, a hole being open on one side, from which the destroyer made his exit. I shall take as early a chance as in my power, to speak of this insect. And in the meantime, would feel particularly obliged by any information on the subject of either this or the caterpillar, addressed to me at Washington, (Miss.)

Cotton picking proceeds very slowly. We have a heavy shower of rain almost every day; and the weather is so moist and dark, that a very great quantity is rotting—seldom less than ten or twelve bolls to the stalk in my own crop, where at all rank. We have lost our best month's picking. The days begin to get short now, and the mornings and evenings cool, when a negro's fingers lose all suppleness.

As I have more than once remarked, I should greatly regret seeing cotton go up to any inflated price. But at the same time, it is great folly for any planter to allow his present short crop to be sold, until he knows how great the deficit is likely to be. A sufficient number *will be compelled* to sell early, as is always the case.

Thomas Affleck.

From the Boston Cultivator.

FATTENING OF HORSES.

To fatten a horse in a short space of time has generally been considered a very great art, and attened with much difficulty. Some authors are of opinion it is necessary for a horse to swallow a certain quantity of medicine to produce the desired effect; while others rely on an uncommon or peculiar kind of food; but experience has proved that both opinions are erroneous, and that the few simples here recommended, together with good rubbing, and a particular

manner of feeding, will accomplish the fattening of a horse that is not a garron or extremely poor, within three or four weeks. After your stable is prepared, provide a plenty of good corn, hominy, oats, bran and fodder—also a sufficient quantity of straw to keep him with a comfortable and clean bed; then notice the condition of the animal for the purpose of bleeding in the neck. Should he be very poor, take from him only one quart of blood; if in tolerable plight two quarts—repeating the bleeding at the expiration of every eight or ten days, until he is fat. Take of flaxseed one pint, boil it to a stout tea of one quart; take of powdered brimstone, one table spoonful; saltpetre, one tea spoonful; of bran, one and a half gallons; mix them all together, scalding the bran with tea, forming a mash; which may be given every eight days; not permitting the horse to drink cold water for eight or ten hours afterwards. Take of assafœtida, half an ounce; wrap it in a clean linen wrag, and nail it in the bottom of the manger where the animal is fed; at first, the horse will eat unwillingly where it is placed, but in a few days he will grow remarkably fond of it.

When you commence kind treatment towards a horse that has been cruelly used, let it be with great caution, or you may produce a founder or some other injury; those serviceable animals being too often hard used and half starved. For three or four days, allowance a horse (you intend fattening) to two and a half gallons a day, six or eight bundles of fodder, or an equal quantity of hay; after which you may keep your rack constantly full of long food, and never permit the manger to be entirely empty, taking care to change the food every day, giving the largest portion of bran, viz: bran and hominy, bran and oats, bran and corn, bran alone, oats, corn, hominy, &c. &c. The food moistened occasionly with strong sassafras tea, produces an admirable effect; it whets the appetite, enriches the blood, and opens the bowels.

Whenever a horse is fed, all sour food, &c., should be removed from his manger, and washed twice a week with vinegar and salt; this kind of attention will aid the appetite, and keep the manger sweet and clean. If the season of the year you undertake to fatten in, affords green food of any kind, a little about twelve o'clock would assist you much in accomplishing your object. In the bucket in which you water, throw a handful of salt two or three times a week; it becomes very grateful to the taste, after a few days confinement, and will prevent his pawing and eating dirt. But if flesh is to be placed upon a horse to render hard service, I would recommend moderate exercise once every three days, carefully avoiding fretting or alarming him; more injury may be done a horse by fretting him one day, than you can remove in a week by the kindest treatment. The hoofs should be cleaned out every morning and evening, stuffed with clay and salt, or fresh cow manure, to keep the feet cool and prevent a swelling in the legs. A plenty of good rubbing is absolutely necessary for the placing of flesh speedily on a horse; and

a blanket as a covering, at any time, except the summer months, will place on his coat of hair a beautiful gloss, and add much to his comfort and apparent value. [*English Paper.*

From the Albany Cultivator.

WIND POWER—NEW INVENTION.

Mr. Tucker :—I would wish to bring to the notice of the public, through the medium of the Cultivator, an important improvement in the wind-mill, a model of which, you may recollect, was exhibited at my hotel last winter, by Dr. Bridgman, of Cabotville, Mass.

It is believed that by the aid of this improvement, wind-power may be used to advantage in many situations where water-power or nothing better can be had.

The great objection generally to a machine being worked by wind, is the unsteadiness of the power, varying from a stand-still to the greatest velocity, at which speed it is liable to injure any machinery attached to it.

A stationary power which can be applied to the various operations of the farm and out-buildings, would be a desideratum with every farmer whose business is on any thing like an enlarged scale.

There are a great many operations on the farm which may be economically performed by a stationary power; that is, by water, by steam, by horses or by wind. The same power that is applied to the threshing of grain, cutting fodder, or the grinding of apples, may, if properly adjusted, and with a trifling additional expense, be applied to the crushing of grain for farm stock, or even for grinding for family use—to the sawing of wood, slitting of boards, to the pumping of water, turning of the grindstone, and various other stationary uses. A friend on Staten Island erected a wind-mill on the old and common principle, which he applied to fourteen different purposes.

The following description of one of these wheels, now in successful operation, I clip from a Chickopee paper. By publishing it, you will not only confer a favor on the ingenious inventor and proprietor, but aid the farmer and mechanic. C. M. Bement.

Albany, June, 1846.

"On Friday last we visited a new, and we think, highly valuable invention of Mr. A. Judd, of this village, called a "*Centrific Wind-Wheel.*" For simplicity of construction and efficiency of action, it exceeds anything in the shape of a wind-mill that we have ever seen. The principles on which it is constructed are entirely new; and the inventor, in conjunction with Dr. J. B. Bridgman, who as joint proprietor, have obtained letters patent for the invention. The wheel resembles a common overshot or breast water-wheel,

except its motion is horizontal; and is propelled by the application of wind upon the inner surface. By this application, the entire circumference of the wheel is kept constantly before the wind, the whole force of which is brought to bear square upon the lever, producing a power three or four times as great as any other wind-wheel in operation. What adds greatly to the value of this wheel is the fact that it is enclosed in a building, and consequently entirely excluded from the weather. This, together with the simplicity of its construction, must extend its durability almost beyond the power of calculation. The building is covered with strips of board, about a foot wide, hung upon pivots, and connected with rods on the inner side like common Venetian window-shutters, and can be opened and shut at pleasure. By this arrangement, any quantity of wind can be admitted and excluded; and the wheel is as easily managed in a gale of wind as in a breeze; and is as completely under the control of the operator, as any water-power. The building is two and a half stories high, the wheel being located in the upper half story. By opening the shutters to the windward, in the second story, and to the leeward in the upper half story, the wheel is set in motion by the passage of the wind up through the centre of the wheel pressing upon the inner surface of the buckets. The wheel which the patentee has erected, is a temporary one, merely to exemplify the principles, fourteen feet in diameter, and seven feet high; and produces from one to five horse power, according to the strength of the wind, and propels a grindstone, a circular saw, and he intends to add a pair of mill-stones for grinding provender. It operates admirably.

What constitues the great value of this novel and highly ingenious invention, is the cheapness of its construction, and its consequent adaption to the almost infinite variety of objects for which power is required. It can be constructed of any size, to produce from one *dog power* to a *hundred horse power;* and from its simplicity and consequent ease of management, is brought within the reach of every farmer and mechanic. By its aid, the farmer may thresh his grain, saw his wood, draw water for his stock, cut his feed, grind his provender, churn his butter, grind his axes and scythes, &c. &c. The mechanic, by its aid, can propel his planing machines, his turning lathe, his trip hammer, his circular saw, grind his bark, split his leather, saw his shingles, grind his tools, slit out his stuff, saw out his felloes, &c. &c. &c.

In fact, we can see no reason why it is not destined to become one of the most valuable inventions of this inventive age. And we sincerely hope and trust, that, the ingenious inventor and his enterprising partner, Dr. Bridgman, will receive that ample renumeration which is ever due, though not always awarded to genius and enterprise."

From the American Farmer.

INDIAN CORN MEAL.

[Extract of a letter from a high respectable American source in London to a member of Congress.]

"Your prophecy as to Indian corn is now likely to be realized to a greater extent than any one ever hoped for. The Irish are so fond of this new article of food, that they are in a fair way to give up potatoes. At Limerick, a riot was created by a false rumour that the millers intended to stop the issue of meal. In Cork the Government sells ten thousand pounds (say nearly twenty thousand dollars worth) each week, at one penny per ponnd; and private dealers sell a great deal besides at a lower price, about four-fifths of a penny."

It is especially gratifying to us to find by the above extract, that the *taste* and *nutricious properties* of Indian corn meal, is in so fair a way to fix upon the palate and judgment of so large a portion of the population of Great Britain. At a very early stage of the contemplated change in the English Corn Laws, we predicted that if the use of corn meal could be but once introduced there, that it would work its way to consumption and general favor. Our reason for this opinion, arose from a knowledge of its intrinsic virtues as food for either man or beast, and from the conviction which fastened itself upon our mind, that when those virtues should become known to our transatlantic brethren—when they should have a chance of being tested—that its use must become general, and that from its superiority over the largest portions of breadstuffs used by the laboring classes, that we should find a permanent market for it in England.

Of any great advantages to result to the American *wheat-growers* from the newly adopted Corn Laws of England, we have never had much conceit—as, at best, the American exporters could only come in for their share of supply, to make up the deficiency existing between the demand for consumption in the British Kingdom, and the quantity grown there: and from our remoteness from its markets, compared with that of the wheat depots on the Baltic and Black seas, and the preference secured to Canadian wheat, the chances of our furnishing any considerable portion of that deficiency must necessarily be small. But as we are differently situated with regard to corn meal—being without a competitor—it must necessarily follow, that should the article meet with a fair trial, its superior properties for human consumption, as well as for the fattening of stock of all kinds, must increase with each revolving year.

One word with regard to the exportation of corn and corn meal. It should always be previously kiln-dried; without this precaution, the quality of either will be deteriorated by the effects of the sea-voyage—therefore, as first impressions are the most lasting, the greatest care should be observed in preparing any corn, or corn meal, which may be sent thither, in order that it may not suffer in character.

AGRICULTURAL STATISTICS.

We regret to find by a *circular* from the *Hon. Edmund Burke*, Commissioner of Patents, that owing to the refusal on the part of Congress to make the usual appropriation for collecting agricultural statistics, no report upon Agriculture will be issued from his office in future. Those who have been in the habit of receiving this *invaluable document*, will, we are sure, join with us in the expression of profound regret, that Congress, through any notions of mistaken economy, should have been induced to withhold the necessary appropriations to cover the expense of collecting and disseminating the varied statistics of the country, as connected with its agricultural products and resources. As there is no other means of ascertaining, annually, the facts connected with this interesting branch of American industry, it becomes a matter of surprise, that intelligent Statesmen should have done an act, whose effect is, to deprive themselves of the only means of obtaining information absolutely necessary to a proper understanding of the interests of their constituents.

[*American Farmer.*

OVER FEEDING CATTLE.

The *Prairie Farmer* says:—It is well known to most persons that horses and cattle by accident or otherwise, do sometimes eat too much grain; and I have known such cases to prove the death of some in a short time; others again linger for some time, and the disease sets upon some part—most commonly the limbs—and renders the creature almost or quite unfit for use. The simple remedy, when you are satisfied that an animal has eaten too much, is only to take, for a horse, 1½ pint melted lard, put it in a common junk bottle, and turn it down his throat by taking hold of his tongue with your hand and pulling it out one side of his mouth, and put the nose of the bottle in the other side. Manage in the same way with cattle, only the dose may be one pint. And this same remedy I would recommend for creatures that are hoven or swollen by eating too much green clover or any other thing that brings on this complaint.

TOMATO PICKLES.

Take tomatoes two-thirds ripe, (when they begin to turn a little red,) prick them with a fork, put them in a strong brine, and let them remain eight days; then put them in weak vinegar to remain 24 hours; remove them from this, put them in stone jars; and to a peck of tomatoes, add a bottle of mustard, an ounce of cloves, and an

—Postage,- 3½ cents.

ounce of black pepper ground, laying alternately a layer of tomatoes and spices. Then pour on strong vinegar cold and they will be found to be delicious. The brine should be prepared by boiling and putting in as much salt as will dissolve, then suffered to cool. For any kind of pickles it is best when prepared in this way.

Another.—Take the small round tomatoes, let them lay in weak vinegar two or three days; then prepare the best of vinegar by putting in cloves, allspice, pepper, cinnamon, and such spices as one may fancy, and then scalding it well. When entirely cold, put in the tomatoes, and if there is sufficient body to the vinegar, your pickles will never require any farther trouble, provided they are kept from the air. An ounce of alum to a gallon of vinegar is a great improvement to *cucumber* pickles, but the writer has never tried it for tomatoes.

Green tomato pickles, or tomato soy.—Slice green tomatoes, crosswise, put them in a stone jar, in layers, giving a liberal sprinkling of salt to each layer, till the jar is full. Let them stand over night; then squeeze all the water from them that can be done by pressing them with the hands. Then commence putting them in jars by laying the tomatoes two inches thick, and sprinkling on the layer of ground allspice, cloves, mustard-seed, pepper, horse-radish, stick cinnamon and onions, if they are liked. When the pot is full, pour on the best of cider vinegar, put on a slight weight, and cover it tight. The writer has used this recipe a number of years and never had occasion to pour off the vinegar and scald it, but this should be done if there is the least appearance of fermentation.

[*Albany Cultivator.*

TOMATO FIGS, PRESERVES, PICKLES, AND CATSUP,

Seize the present occasion, before this vegetable is gone, and prepare *jars of tomato figs,—preserved tomatoes—pickled tomatoes—and tomato catsup;* and while putting them up, be sure to do so in such quantities as will carry you through the ensuing season—besides being grateful to the palate in any way the tomato is prepared, it is most assuredly one of the most healthy vegetables that is grown.

[*American Farmer.*

OYSTERS OF GREEN CORN.

A lady of whose skill in housewifery we have seen good evidence, has kindly furnished us the following directions for preparing a dish, which, she assures us, very much resembles fried oysters, in taste.

"Grate 12 ears of sweet corn; take one-half a pint of milk to rinse out the cobs; add six eggs, three table spoonfuls of flour; and salt to the taste. Fry them on a buttered griddle, like pancakes. They should be fried slowly, and be thoroughly cooked."

[*Albany Cultivator.*

TO OUR SUBSCRIBERS.

We shall continue to publish the names of those generous patrons, who pay us for the *Southern Agriculturist*, because we think they are supporting a work of public utility, and performing the part of patriots. In order to assist those at a distance who have not complied with our frequent calls, we insert a method by which we may get our dues through the Post-office. An order on the Postmaster in Charleston, will be thankfully received; the following is the form:

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SIR,—Please pay the Publisher of the Southern Agriculturist, ——— dollars, it being the amount this day deposited by A. B. as subscription money for said paper.

(Signed,) C. D., *Postmaster.*

To the Postmaster at Charleston.

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C. D., *Postmaster.*

To the Postmaster at Charleston.

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TO OUR CORRESPONDENTS AND READERS.

We present our readers with an excellent Address by M. C. M. Hammond, of Georgia, delivered before the Burke County Central Agricultural Society; as it treats of things highly interesting to the planters of the Southern States, we shall publish it all. The remainder shall appear in our next. We recommend it to their attentive perusal.

The Report on the Management of Slaves we copy from the Southern Cultivator; although our previous volumes contain many articles recommending pretty much the same treatment, yet as it is a subject that cannot be too often kept in view, for the better information of the new settlers in the Southern States, we insert it with pleasure.

The articles by Mr. Thos. Affleck, describing the Cotton Moth or Caterpillar, which is produced by the *Noctnaxyliana*, or night fly, was sent us corrected. It was originally published in the New-Orleans *Commercial Times;* and the two articles will give a tolerable idea of the ravages of that insect on the present cotton crop. We hope a further account will reach us in time for our next number. Will not some of our agricultural friends give us their views for publication.

We hope that our work will meet with more encouragement the coming year, or we shall despair of its continuance. The few original pieces we can obtain, does not keep up the character of our work, and we are unwilling to make it a mere copy of other Journals. But hope that there is more pride left in the planters [illegible] and names from our "*Southern Agriculurist.*"